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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hui Li

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1201 NEW YORK AVENUE, N.W.

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EXAMINER

CASCA, FRED A

ART UNIT

PAPER NUMBER

2617

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,664	Applicant(s) LI, HUI	
	Examiner FRED A. CASCA	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to applicant's amendment filed on April 14, 2010. Claims 12-28 are still pending in the present application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 29-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The new independent claim 1 recites the limitations "information from a first radio station to a radio access point via at least one intermediate radio station" and "receiving a request at a base station from the first radio station, to establish a communication path to the radio access point". These limitations have not been described in the specification.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 12-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliot et al (US 6,685,476), in view of Song et al (US 2004/0146013 A1), in view of Shin (6,549,543 B1).

Referring to claim 12, Elliot discloses a method for determining a path to convey information from a first station to a second station via at least one intermediate station (abstract and Fig. 1-6), the information being conveyed such that the first station and each intermediate station transfer the information to an adjacent station in a direction of the path, from a transferor radio station to a transferee radio station (Fig. 1-6, Col. 4, lines 4), comprising:

determining at least a portion of the path upon request of the first station (Col. 4, lines 38-54, "routing algorithm", "SPF", "DV", "AODV" 13);

transmitting path identification information from the installation to the first radio station transmitting to one or more intermediate radio station the path identification information (Co. 5, lines 40-60); , information identifying an other intermediate radio station and information (Co. 5, lines 40-60).

Elliot is silent on dividing a frequency band into a plurality of subbands for communication between the radio stations, with at least one subband being assigned to each radio station and identifying the subband assigned to it and/or identifying the first radio station and information identifying the subband assigned to it and/or identifying the second radio station and information identifying the subband assigned to it.

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Song discloses dividing a frequency band into a plurality of subbands for communication between the radio stations, with at least one subband being assigned to each radio station (par. 05, note that “FDMA” and “TDMA” systems divide frequency bands into subbands where each access point is allocated a bandwidth, and each assigned/registered mobile terminal is assigned a portion of that frequency when the mobile terminal is in communication); identifying the subband assigned to it and/or identifying the first radio station and information (Par. 5, note that in WLAN networks, each access point is assigned a portion of frequencies/bandwidth which different from adjacent access points) identifying the subband assigned to it and/or identifying the second radio station and information identifying the subband assigned to it (Par. 5).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the invention of Song in the format claimed, for the purpose of assigning the path determination to a central element and thus providing an efficient communication system.

Elliot is silent on a radio installation determining at least a portion of a path for transmission and transmitting the path information to the a radio installation doing the determining of the path and transmitting it to the first radio station in the format claimed.

Shin discloses a radio installation (Mobile Switching Center 50) determining at least a portion of a path for transmission and transmitting the path information to the a radio installation doing the determining of the path and transmitting it to the first radio station in the format claimed (Figures 1-3, Col. 4, lines 45-67, “a mobile switching center 50 for determining a communication path in accordance with a communication service required by the mobile station

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20, an interworking function device 60, connected to the mobile switching center 50, for interworking with an public switched telephone network 100 or an X.25 network 200 or an Internet 300, and a router 310 for performing a routing operation so that the interworking function device 60 is connected to the Internet 300”, note that the MSC (radio installation) determines at least the portion of communication from the mobile device to the BSC).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the invention of Song in the format claimed, for the purpose of assigning the path determination to a central element and thus providing an efficient communication system.

Referring to claim 13, the combination of Elliot/Song/Shine discloses the method according to claim 12, and further disclose in addition to the path identification information, the radio installation transmits to the first radio station: information identifying the transferee radio station for the first radio station, and information identifying the subband assigned to its transferee radio station, and the radio installation transmits to each intermediate radio station: the path identification information, information identifying the transferee radio station, and information identifying the subband assigned to the transferee radio station (Song, Fig. 1-3, note that identifying information with respect to subbands allocated to access points and downlink and uplink mobile terminal is inherent in the WLANs so that the same frequency or subband is not assigned to different radio nodes).

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Referring to claim 14, the combination of Elliot/Song/Shine discloses the method according to claim 13, and further disclose the radio installation transmits to each intermediate radio station information identifying the transferor radio station for the intermediate radio station, and information identifying the subband assigned to the transferor radio station (Fig. 1-3, note that identifying information with respect to subbands allocated to access points and downlink and uplink mobile terminal is inherent in the WLANs so that the same frequency or subband is not assigned to different radio nodes).

Referring to claim 15, the combination of Elliot/Song/Shine discloses the method according to claim 12, wherein, the radio installation transmits the path identification information to the second radio station (Fig.1 and Par. 7).

Referring to claim 16, the combination of Elliot/Song/Shine discloses the method according to claim 15, and further disclose the radio installation also transmits to the second radio station information identifying the transferor radio station for the second radio station and information identifying the subband assigned to the transferor radio station (Fig. and see the rejection of claim 1 above).

Referring to claim 17, the combination of Elliot/Song/Shine discloses the method according to claim 12, and further disclose the radio stations of the radio communications system are combined into groups, each group has a single representative radio station, and the radio installation only

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communicates with the representative radio stations in transmitting the path identification information, the information identifying the radio station and the information identifying the subband assigned on it (Fig. 1-3 and see the rejection of claim 1 above).

Referring to claim 18, claim 18 is rejected for the same reason as that of claim 17.

Claim 19 is rejected for the same reasons as claim 17.

Claims 20-24 are rejected for the same reasons as claims 13-16.

Claims 25-27 are rejected for the same reasons as claims 12 and 17-19).

Claim 28 is rejected for the same reason as claim 12.

6. Claim 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliot et al (US 6,685,476), in view of Song et al (US 2004/0146013 A1), in view of Shin (6,549,543 B1) and still further in view of Reed et al (US 2003/0109217 A1).

Referring to claim 29, Elliot discloses a method for determining a path to convey information from a first station to a second station via at least one intermediate station (abstract and Fig. 1-6), the information being conveyed such that the first station and each intermediate station transfer the information to an adjacent station in a direction of the path , from a transferor radio station to a transferee radio station (Fig. 1-6, Col. 4, lines 4), comprising:

determining at least a portion of the path upon request of the first station (Col. 4, lines 38-54, "routing algorithm", "SPF", "DV", "AODV" 13);

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transmitting path identification information from the installation to the first radio station transmitting to one or more intermediate radio station the path identification information (Co. 5, lines 40-60); , information identifying an other intermediate radio station and information (Co. 5, lines 40-60).

Elliot is silent on dividing a frequency band into a plurality of subbands for communication between the radio stations, with at least one subband being assigned to each radio station and identifying the subband assigned to it and/or identifying the first radio station and information identifying the subband assigned to it and/or identifying the second radio station and information identifying the subband assigned to it.

Song discloses dividing a frequency band into a plurality of subbands for communication between the radio stations, with at least one subband being assigned to each radio station (par. 05, note that “FDMA” and “TDMA” systems divide frequency bands into subbands where each access point is allocated a bandwidth, and each assigned/registered mobile terminal is assigned a portion of that frequency when the mobile terminal is in communication); identifying the subband assigned to it and/or identifying the first radio station and information (Par. 5, note that in WLAN networks, each access point is assigned a portion of frequencies/bandwidth which different from adjacent access points) identifying the subband assigned to it and/or identifying the second radio station and information identifying the subband assigned to it (Par. 5).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the invention of Song in the format claimed, for the purpose of assigning the path determination to a central element and thus providing an efficient communication system.

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Elliot is silent on a radio installation determining at least a portion of a path for transmission and transmitting the path information to the a radio installation doing the determining of the path and transmitting it to the first radio station in the format claimed.

Shin discloses a radio installation (Mobile Switching Center 50) determining at least a portion of a path for transmission and transmitting the path information to the a radio installation doing the determining of the path and transmitting it to the first radio station in the format claimed (Figures 1-3, Col. 4, lines 45-67, “a mobile switching center 50 for determining a communication path in accordance with a communication service required by the mobile station 20, an interworking function device 60, connected to the mobile switching center 50, for interworking with an public switched telephone network 100 or an X.25 network 200 or an Internet 300, and a router 310 for performing a routing operation so that the interworking function device 60 is connected to the Internet 300”, note that the MSC (radio installation) determines at least the portion of communication from the mobile device to the BSC).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the invention of Song in the format claimed, for the purpose of assigning the path determination to a central element and thus providing an efficient communication system.

Elliot is silent on whether or not the information is from a first radio station to a radio access point via at least one intermediate radio station and the receiving of the request is at a base station from the first radio station, to establish a communication path to the radio access point, as claimed.

Reed discloses information being requested from a first radio station to a radio access point via at least one intermediate radio station and the receiving of the request is at a base

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station from the first radio station, to establish a communication path to the radio access point (Figures 1-3 and Par. 22, 24 and 27).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the above combination in the format claimed, for the purpose of assigning the path determination to a central element and thus providing an efficient communication system.

Response to Arguments

7. Applicant's arguments with respect to claims 12-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRED A. CASCA whose telephone number is (571)272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Harper, can be reached at (571) 272-7605. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fred A. Casca/

Examiner, Art Unit 2617

/VINCENT P. HARPER/

Supervisory Patent Examiner, Art Unit 2617